

AMENDMENT TO THE CLAIMS

1-6. (Canceled)

7. (Currently amended) A method of designing an interface of a semiconductor integrated circuit which executes plural applications, each of said applications relating to a specific function, ~~for connection between a control function part of a semiconductor integrated circuit and plural applications~~ by using a database storing plural libraries corresponding to operation models of said plural applications, comprising a step of:

analyzing a number of collisions of bus transaction through operation simulation arranged on a processing time base where said applications are operated by said ~~control function part~~ semiconductor integrated circuit by successively using each of said plural libraries as the operation model of each of said plural applications.

8. (Original) The method of designing an interface of Claim 7, further comprising a step of generating FIFOs in a number of stages according to the number of collisions of bus transaction,

wherein the number of collisions of bus transaction is analyzed with the FIFOs virtually inserted between said applications.

9. (Currently amended) A method of designing an interface of a semiconductor integrated circuit which executes plural applications, each of said applications relating to a specific function, ~~for connection between a control function part of a semiconductor integrated~~

~~circuit and plural applications~~ by using a database storing plural libraries corresponding to operation models of said plural applications, comprising a step of:

analyzing a number of concurrent instruction processing through operation simulation arranged on a processing time base where said applications are operated by said semiconductor integrated circuit control function part by successively using each of said plural libraries as the operation model of each of said plural applications.

10. (Original) The method of designing an interface of Claim 9,

wherein a structure of a cross bar bus is determined in accordance with the number of concurrent instruction processing.

11. (Previously presented) The method of designing an interface of Claim 10, further comprising the steps of:

determining a portion where the number of concurrent instruction processing is larger than a predetermined value; and

generating a DMA and/or at least one cross bar bus to be disposed in a bus where the number of concurrent instruction processing is larger than a the predetermined value,

wherein the number of concurrent instruction processing is analyzed with the DMA and/or at least one cross bar bus disposed in the bus.

12. (Currently amended) A method of designing an interface of a semiconductor integrated circuit which executes plural applications, each of said applications relating to a specific function, ~~for connection between a control function part of a semiconductor~~

~~integrated circuit and plural applications~~ by using a database storing plural libraries corresponding to operation models of said plural applications, comprising the steps of:

(a) setting plural main parameters for ultimately evaluating said semiconductor integrated circuit and setting plural sub-parameters affecting each of said main parameters, wherein at least one of said plural sub-parameters is obtained by operation simulation arranged on a processing time base;

(b) selecting library groups where said main parameters meet target values by evaluating each of said main parameters on the basis of said sub-parameters of each of said libraries; and

(c) determining an interface by selecting an optimal library group by evaluating plural main parameters determined with respect to each of said selected library groups.

13. (Original) The method of designing an interface of Claim 12, further comprising, before the step (a), a step of analyzing said sub-parameters of each of said libraries through operation simulation conducted by successively using each of said plural libraries as an operation model of each of said plural applications.

14. (Currently amended) ~~The method of designing an interface of Claim 12~~ A method of designing an interface for connection between a control function part of a semiconductor integrated circuit and plural applications by using a database storing plural libraries corresponding to operation models of said plural applications and plural bus structures, comprising the steps of:

(a) setting plural main parameters for ultimately evaluating said semiconductor integrated circuit and setting plural sub-parameters affecting each of said main parameters;

(b) selecting library groups where said main parameters meet target values by evaluating each of said main parameters on the basis of said sub-parameters of each of said libraries; and

(c) determining an interface by selecting an optimal library group by evaluating plural main parameters determined with respect to each of said selected library groups,

wherein, in the step (a), three main parameters are set and three sub-parameters are set with respect to each of said three main parameters;

in the step (b), a three-dimensional coordinate system having said three sub-parameters as coordinate axes is built for selecting a library group where an area of a triangle determined according to values of said sub-parameters is smaller than a target value; and

in the step (c), a three-dimensional coordinate system having said three main parameters as coordinate axes is built for determining said interface based on a library group where an area of a triangle determined according to values of said main parameters obtained from said selected library groups is minimum.

15. (Currently amended) ~~The method of designing an interface of Claim 12~~ A method of designing an interface for connection between a control function part of a semiconductor integrated circuit and plural applications by using a database storing plural

libraries corresponding to operation models of said plural applications and plural bus structures, comprising the steps of:

(a) setting plural main parameters for ultimately evaluating said semiconductor integrated circuit and setting plural sub-parameters affecting each of said main parameters;

(b) selecting library groups where said main parameters meet target values by evaluating each of said main parameters on the basis of said sub-parameters of each of said libraries; and

(c) determining an interface by selecting an optimal library group by evaluating plural main parameters determined with respect to each of said selected library groups,

said method further comprising, after the step (a) and before the step (b), a step of selecting a library group where a specific sub-parameter noticed among said plural sub-parameters meets a target value,

wherein, in the step (b), a library group where main parameters excluding a specific parameter among said plural main parameters meet target values is selected, and

in the step (c), a library group where said specific main parameter is minimum is selected as said optimal library group.

16. (Currently amended) ~~The method of designing an interface of Claim 12~~ A method of designing an interface for connection between a control function part of a semiconductor integrated circuit and plural applications by using a database storing plural libraries corresponding to operation models of said plural applications and plural bus structures, comprising the steps of:

(a) setting plural main parameters for ultimately evaluating said semiconductor integrated circuit and setting plural sub-parameters affecting each of said main parameters;

(b) selecting library groups where said main parameters meet target values by evaluating each of said main parameters on the basis of said sub-parameters of each of said libraries; and

(c) determining an interface by selecting an optimal library group by evaluating plural main parameters determined with respect to each of said selected library groups,

wherein, in the step (a), affecting coefficients of said plural sub-parameters affecting said main parameters are respectively set,

in the step (b), a library group where said main parameters meet target values is selected on the basis of said affecting coefficients and values of said sub-parameters; and

in the step (b), plural main parameters obtained from said selected library groups are weighted before selecting said library group where said main parameters meet the target values.

17. (Currently amended) A method of designing an interface of a semiconductor integrated circuit which executes plural applications, each of said applications relating to a specific function, ~~for connection between a control function part of a semiconductor integrated circuit and plural applications~~ by using a database storing plural libraries corresponding to operation models of said plural applications, comprising the steps of:

(a) successively selecting each of said plural libraries as the operation model of each of said plural applications;

(b) operating said plural applications by said semiconductor integrated circuit control function part along a processing time sequence, and analyzing performance of ~~said control function part~~, an said interface and said applications arranged on a processing time base ~~attained~~ by using each of said libraries;

(c) repeatedly conducting the steps (a) and (b), whereby determining an interface by selecting an optimal library group on the basis of results of the analysis; and

(d) synthesizing an optimal interface on the basis of said determined parameters.

18. (Currently amended) The method of designing an interface of claim 17,

wherein, in the step (b), a number of collisions of bus transaction occurring by operating said applications ~~without any management by said control function part~~ is analyzed with respect to each of said libraries, and

in the step (d), FIFOs in a number of stages according to the number of collisions of bus transaction are inserted between said applications.

19. (Currently amended) The method of designing an interface of claim 17,

wherein, in the step (b), a number of collisions of bus transaction occurring by operating said applications ~~without any management by said control function part~~ is analyzed with respect to each of said libraries, and a portion where the number of concurrent instruction processing is larger than a predetermined value is determined, and

in the step (d), a cross bar bus is disposed in a bus where the number of concurrent instruction processing is larger than the predetermined value.

20. (Currently amended) A method of designing an interface of a semiconductor integrated circuit ~~an LSI~~ including a bus structure, said semiconductor integrated circuit ~~LSI~~ executes plural applications, each of applications relates to a specific function, the method comprising the steps of:

creating plural libraries, each library contains information of one specified application of the plural applications and one specified bus structure of said semiconductor integrated circuit ~~LSI~~;

analyzing a performance of the bus structure through operation simulation arranged on a processing time base for at least one of said plural libraries, where said specified application is operated for said specified bus structure; and

determining a bus structure of said semiconductor integrated circuit ~~LSI~~ in view of the result of said analyzing step.

21. (Previously presented) The method of designing an interface of Claim 20,

wherein said result of said analyzing step includes a number of collisions of bus transaction occurring.

22. (Previously presented) The method of designing an interface of Claim 21,

wherein said determining step includes inserting FIFOs in a number of stages according to the number of collisions of bus transaction.

23. (Previously presented) The method of designing an interface of Claim 7, wherein the operation simulation is performed without any management.

24. (Previously presented) The method of designing an interface of Claim 9, wherein the operation simulation is performed without any management.

25. (Previously presented) The method of designing an interface of Claim 13, wherein the operation simulation is performed without any management.

26. (Previously presented) The method of designing an interface of Claim 17, wherein the step (b) of operating said plural applications is performed without any management.

27. (Previously presented) The method of designing an interface of Claim 21, wherein the operation simulation is performed without any management.